

What is claimed is:

1. A method for generating and printing an indicium on an object, said object having other material printed thereon, said method comprising the steps of:

- a) obtaining an image of said other printed material, said image being transformed in a manner corresponding to printing and scanning of said material, to generate characterizing information, said characterizing information being selected to fit within said indicium;
- b) cryptographically authenticating said characterizing information and other information;
- c) generating said indicium to be representative of said cryptographically authenticated information;
- d) printing said indicium on said object; and
- e) said object's relationship to said indicium can be verified by regenerating said characterizing information from said other printed material and comparing said regenerated characterizing information with characterizing information recovered from said indicium, and copies of said indicium cannot easily be used without detection on other objects which do not include said other printed material.

2. A method as described in claim 1 where said image is obtained by scanning said other printed material from said object.

3. A method as described in claim 2 where said indicium is a postal indicium and said object is a mail piece.
4. A method as described in claim 3 where said other printed material is an address block and said characterizing information comprises measurements of word lengths of words comprised in said address block.
5. A method as described in claim 4 where said word lengths are normalized.
6. A method as described in claim 4 where said word lengths are expressed as a selected number of bits per word, said number of bits per word being selected so that lengths for all words in said address block can be expressed in a total number of bits less than or equal to a predetermined number.
7. A method as described in claim 3 where said other printed material is an address block and said characterizing information comprises a count of outliers in said address block.
8. A method as described in claim 7 where said outliers are counted on a per word basis.
9. A method as described in claim 7 where said outliers are counted on a per line basis.
10. A method as described in claim 7 where said characterizing information indicates whether said outliers are counted on a per word basis or on a per line basis.
11. A method as described in claim 7 where said characterizing information includes counts of upwards outliers and of downwards outliers.

12. A method as described in claim 3 where said other printed material is an address block and said characterizing information comprises information which is descriptive of the shape of said address block, or of lines, or of words comprised in said address block.
13. A method as described in claim 12 where said descriptive information comprises a description of a best fit curve enclosing said address block, or said lines, or said words.
14. A method as described in claim 13 where said curve is comprised of straight line segments.
15. A method as described in claim 14 where said curve is described in terms of a length and direction for at least selected ones of said segments.
16. A method as described in claim 14 where said curve is described in terms of coordinates of end points for at least selected ones of said segments.
17. A method as described in claim 14 where said curve is described in terms of direction, and without length, for at least selected ones of said segments.
18. A method as described in claim 1 where said image is obtained by transforming a pristine image with a filter, said filter simulating the transfer function of printing and scanning processes.
19. A method as described in claim 18 where said indicium is a postal indicium and said object is a mail piece.

- 20. A method as described in claim 19 where said other printed material is an address block and said characterizing information comprises measurements of word lengths of words comprised in said address block.
- 21. A method as described in claim 20 where said word lengths are normalized.
- 22. A method as described in claim 20 where said word lengths are expressed as a selected number of bits per word, said number of bits per word being selected so that lengths for all words in said address block can be expressed in a total number of bits less than or equal to a predetermined number.
- 23. A method as described in claim 19 where said other printed material is an address block and said characterizing information comprises a count of outliers in said address block.
- 24. A method as described in claim 23 where said outliers are counted on a per word basis.
- 25. A method as described in claim 23 where said outliers are counted on a per line basis.
- 26. A method as described in claim 23 where said characterizing information indicates whether said outliers are counted on a per word basis or on a per line basis.
- 27. A method as described in claim 23 where said characterizing information includes counts of upwards outliers and of downwards outliers.
- 28. A method as described in claim 19 where said other printed material is an address block and said characterizing information comprises information which is

descriptive of the shape of said address block, or of lines, or of words comprised in said address block.

29. A method as described in claim 28 where said descriptive information comprises a description of a best fit curve enclosing said address block, or said lines, or said words.

30. A method as described in claim 29 where said curve is comprised of straight line segments.

31. A method as described in claim 30 where said curve is described in terms of a length and direction for at least selected ones of said segments.

32. A method as described in claim 30 where said curve is described in terms of coordinates of end points for at least selected ones of said segments.

33. A method as described in claim 30 where said curve is described in terms of direction, and without length, for at least selected ones of said segments.

34. A secure indicia printing system for generating and printing an indicium on an object, comprising:

- a) a printer for printing said indicium;
- b) a scanner for scanning an image of other printed material from said object;
- c) a processor communicating with said scanner to receive said image for processing said image to abstract said characterizing information from said image, said characterizing information being selected to fit within said indicium; whereby

d) a meter, said meter communicating with said processor to receive said characterizing information, and having a communications link for receiving other information from another information source, and communicating with said printer, for;

 d1) cryptographically authenticating said characterizing information and other information;

 d2) generating said indicium to be representative of said cryptographically authenticated information; and

 d3) controlling said printer to print said indicium on said object; and

 e) said object's relationship to said indicium can be verified by regenerating said characterizing information from said other printed material and comparing said regenerated characterizing information with characterizing information recovered from said indicium, and copies of said indicium cannot easily be used without detection on other objects which do not include said other printed material.

35. A system as described in claim 34 where said indicium is a postal indicium and said object is a mail piece, said meter accounting for postal value represented by said indicium.

36. A system as described in claim 35 where said other printed material is an address block and said processor abstracts measurements of word lengths of words comprised in said address block to generate said characterizing information.

37. A system as described in claim 36 where said processor normalizes said word lengths.

38. A system as described in claim 36 where said processor expresses said word lengths as a selected number of bits per word, said number of bits per word

38. A system as described in claim 36 where said processor expresses said word lengths as a selected number of bits per word, said number of bits per word being selected so that lengths for all words in said address block can be expressed in a total number of bits less than or equal to a predetermined number.
39. A system as described in claim 35 where said other printed material is an address block and said processor abstracts a count of outliers in said address block to generate said characterizing information.
40. A system as described in claim 39 where said processor counts said outliers on a per word basis.
41. A system as described in claim 39 where said processor counts said outliers on a per line basis.
42. A system as described in claim 39 where said processor selects whether to count said outliers on a per word or per line basis, and said characterizing information indicates whether said outliers are counted on a per word basis or on a per line basis.
43. A system as described in claim 44 where said processor counts upwards outliers and downwards outliers.
44. A system as described in claim 35 where said other printed material is an address block and said processor abstracts information which is descriptive of the shape of said address block, or of lines, or of words comprised in said address block to generate said characterizing information.

45. A system as described in claim 44 where said descriptive information comprises a description of a best fit curve enclosing said address block, or said lines, or said words.
46. A system as described in claim 45 where said curve is comprised of straight line segments.
47. A method as described in claim 46 where said processor describes said curve in terms of a length and direction for at least selected ones of said segments.
48. A method as described in claim 46 where said processor describes said curve in terms of coordinates of end points for at least selected ones of said segments.
49. A method as described in claim 46 where said processor describes said curve in terms of direction, and without length, for at least selected ones of said segments.
50. A programmable system for generating and printing an generating characterizing information for printed material, said system being programmed to:
 - a) receive or generate a pristine digital image of said printed material;
 - b) transform said pristine image in a manner corresponding to printing and scanning processes;
 - c) generate characterizing information descriptive of said transformed image; and
 - d) output said characterizing information for comparison with said printed material.

51. A system as described in claim 50 where said printed material is an address block for a mail piece.
52. A system as described in claim 50, said system being further programmed to control a printer to print said printed material.